

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Superior Refining Company Explosion - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: POLREP #3
Sitrep 3
Superior Refining Company Explosion

Superior, WI

To: Mark Johnson, ATSDR
Tom Landwehr, Minnesota DNR
Todd Goeks, NOAA
Wayne Babcock, U.S. Department of Interior
Valencia Darby, U.S. DOI
Jim Augustyn, U.S. EPA
Rachel Bassler, U.S. EPA
Carolyn Bohlen, U.S. EPA
Sam Borries, U.S. EPA
Jaime Brown, U.S. EPA
Phillippa Cannon, U.S. EPA
Mark Durno, U.S. EPA
Jason Elzein, U.S. EPA
HQ EOC, U.S. EPA
Ed Fairbanks, U.S. EPA
John Glover, U.S. EPA
Mick Hans, U.S. EPA
Darrel Harmon, U.S. EPA
Matt Mankowski, U.S. EPA
Jennifer Manville, U.S. EPA
Mike Ribordy, U.S. EPA
Steve Ridenour, U.S. EPA
Ellen Riley, U.S. EPA
Doug Winder, U.S. EPA
Annette Trowbridge, U.S. Fish & Wildlife
Roy Irving, WDHS
John Sager, WDNR
Andrew Savagian, WDNR
Ed Chu, EPA
Joy Wiecks, Fond du Lac

From: David Morrison, OSC

Date: 5/1/2018

Reporting Period: 04/29/18 - 05/01/18

1. Introduction

1.1 Background

Site Number:	Contract Number:
D.O. Number:	Action Memo Date:
Response Authority: OPA	Response Type: Emergency
Response Lead: EPA	Incident Category:
NPL Status: Non NPL	Operable Unit:
Mobilization Date: 4/26/2018	Start Date: 4/26/2018
Demob Date:	Completion Date:
CERCLIS ID:	RCRIS ID:
ERNS No.:	State Notification:
FPN #: E18516	Reimbursable Account #:

1.1.1 Incident Category
Emergency Response

1.1.2 Site Description

1.1.2.1 Location

The Superior Refining Company Refinery is located at 2407 Stinson Ave, Superior, Douglas County, WI 54880. The refinery is located southeast of the city center of Superior. Lake Superior is located to the north/northeast of the refinery.

1.1.2.2 Description of Threat

An explosion in the facility resulted in an asphalt tank fire and a significant smoke plume as well as several smaller fires, and the threat of a hydrogen fluoride (HF) release to the community. Oil continues to leak from damaged tanks and piping on the refinery, resulting in a potential continued discharge to Newton Creek. Newton Creek drains into Lake Superior. EPA has observed a sheen leaving the refinery property in the ditch and in the Creek on 4/27 and 4/28, 2018.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Following arrival at the scene, EPA began to conduct air monitoring.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

On 4/26/18 at approximately 1000 CST, Superior Refining Company was shutting down equipment at the refinery when an explosion occurred. It is believed that an unknown hydrocarbon was released, which ignited. By 1100 CST, the small fire was extinguished. During the explosion, however, a piece of shrapnel damaged tank 101, which was full of asphalt (50,400 barrels). Around 1200 CST, a second fire began in the breached Tank 101. Due to the ensuing fire, the refinery was subsequently evacuated. A community evacuation was also ordered by the Fire Department. The evacuation was approximately 6 miles (3 miles east, 3 miles west, by 10 miles south), primarily driven in size due to a concern about a potential failure of a 15,000 pounds hydrofluoric acid (HF) container.

The fire spread at the facility to process units, ground fires by tanks 103 and 104, a vac tower, a crude unit, tank 100, gate 101, tank 103 mixer, and a main column. 7 tanks were affected and had insulation burned off. The fire in tank 101 was initially extinguished at 1842 CST, however, hot spots associated with the tank were not completely extinguished until 2355 CST.

Superior Refining Company filed an NRC report (#1210367) at 1126 EST on 4/26/18 reporting an air release of an unknown hydrocarbon which resulted in an explosion.

Situational update for current reporting period:

04/29 – 05/01: Site stabilization efforts continued while the facility remained on a high state of readiness. Leaks, as discovered, were stopped as risk assessments continued. Subject matter experts were brought to the site and integrated into planning to address critical elements such as a leaning stripping tower and removal of HF acid. Nitrogen Purging of reactor beds and flare systems was begun. Insulation, which was blown to the other side of a road, is being sampled to verify if asbestos is present. Systematic inventorying and prioritization for de-inventorying the damaged portions of the facility was begun.

2.1.2 Response Actions to Date

During prior reporting period

See POLREP #2 for operations during second reporting period

During current reporting period

EPA has overseen the establishment of a three-tiered air monitoring network and has been involved with the development of the air monitoring plan for the response. One monitoring zone is inside the work areas of the damaged facility (hot zone), one at the perimeter (fence-line), and one throughout the community. Superior Refinery currently has a network consisting of 23 Area RAEs and multiple particulate meters. Each Area RAE collects O₂, LEL, H₂S, VOCs, and CO.

The EPA Emergency Response Team (ERT) has developed a web-based viewer to manage the air data as it is submitted by the Refinery's consultant GHD. All air monitoring data is also shared with the Wisconsin State Health Department and the Douglas County Dept. of Health and Human Services. As a contingency, Superior Refinery has agreed to forward live data from their existing monitoring network to EPA's Viper Server during an emergency. In the event of an emergency GHD will enable the connection. EPA will then coordinate with GHD, see where they have deployed their mobile response teams and direct our START team(s) to fill in any gaps. EPA and GHD can then easily share this data with appropriate health agencies.

The Wisconsin DNR has required cleanup of oil sheens, fire fighting foam and oiled debris from Newton Creek and the on-site ponds as well as a host of other program efforts such as overseeing the repair and re-start of the WWTF and evaluation of wildlife impacts. EPA is providing technical support as needed.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The refinery is owned by Superior Refining Company, LLC. A notice of federal interest has been issued to Superior Refining Company, LLC.

2.1.4 Progress Metrics

Waste Stream	Medium	Quantity	Manifest #	Treatment	Disposal

2.2 Planning Section

2.2.1 Anticipated Activities

EPA will continue to ensure that Superior Refining Company's air monitoring plan is maintained while continued operations at the facility occur that could result in off-site releases. EPA will be conducting some air monitoring as an independent validation of GHD data and is on standby in case another fire occurs on site or an off-site air release is detected. Superior Refinery plans to remove the HF acid and anhydrous ammonia when it can safely be done. Likewise, chlorine cylinders will be moved to a more secure location.

Newton Creek and off-site water impacts and response actions by the responsible party will continue to be monitored.

2.2.1.1 Planned Response Activities

Continue to monitor the response efforts

2.2.1.2 Next Steps

Continue to monitor the response efforts.

2.2.2 Issues

None

2.3 Logistics Section

R5 EPA Emergency Response Staff assisted with logistics

2.4 Finance Section

2.4.1 Narrative

An FPN was initially opened for \$50,000. An increase to \$100,000 was approved by the fund center on 4/28/18.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
TAT/START	\$50,000.00	\$0.00	\$50,000.00	100.00%
Intramural Costs				
Total Site Costs	\$50,000.00	\$0.00	\$50,000.00	100.00%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

2.5 Other Command Staff

2.5.1 Safety Officer

OSC and Superior Refining Safety Officer are filling this role.

2.5.2 Liaison Officer

OSC and Superior Refining Liaison Officer are filling this role.

2.5.3 Information Officer

EPA Press Officer Rachel Bassler and Superior Refining PO are serving this role.

3. Participating Entities

3.1 Unified Command

EPA is not currently in a Unified Command role but continues to be involved in the command structure and planning process.

3.2 Cooperating Agencies

Superior Fire Department
Douglas County Emergency Management
Superior Police Department
Wisconsin Department of Natural Resources (WDNR)
Minnesota Pollution Control Agency (MPCA)
Agency for Toxic Substances and Disease Registry (ATSDR)
Douglas County Health Department
Wisconsin Department of Health Services
Minnesota Department of Health
Occupational Safety and Health Administration (OSHA)
Chemical Safety Board (CSB)

4. Personnel On Site

EPA Region 5: One on-site, 3 offsite

EPA ERT and contractors: 3

START: 2

WDNR: 3

Superior Refining Company, TBD

Local and state officials: TBD

5. Definition of Terms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
WDNR	Wisconsin Department of Natural Resources
EPA	Environmental Protection Agency
ERRS	Emergency and Rapid Response Service
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
OPA	Oil Pollution Act
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
NRC	National Response Center
OSC	On Scene Coordinator
RCRIS	Resource Conservation and Recovery Act Information System
PRP	Potentially Responsible Party
CWA	Clean Water Act

START Superfund Technical Assessment and Response Team
US FWS United States Fish and Wildlife Service
USCG United States Coast Guard

6. Additional sources of information

6.1 Internet location of additional information/report

Additional information can be found on the Douglas County Website: <https://www.douglascountywi.org/>

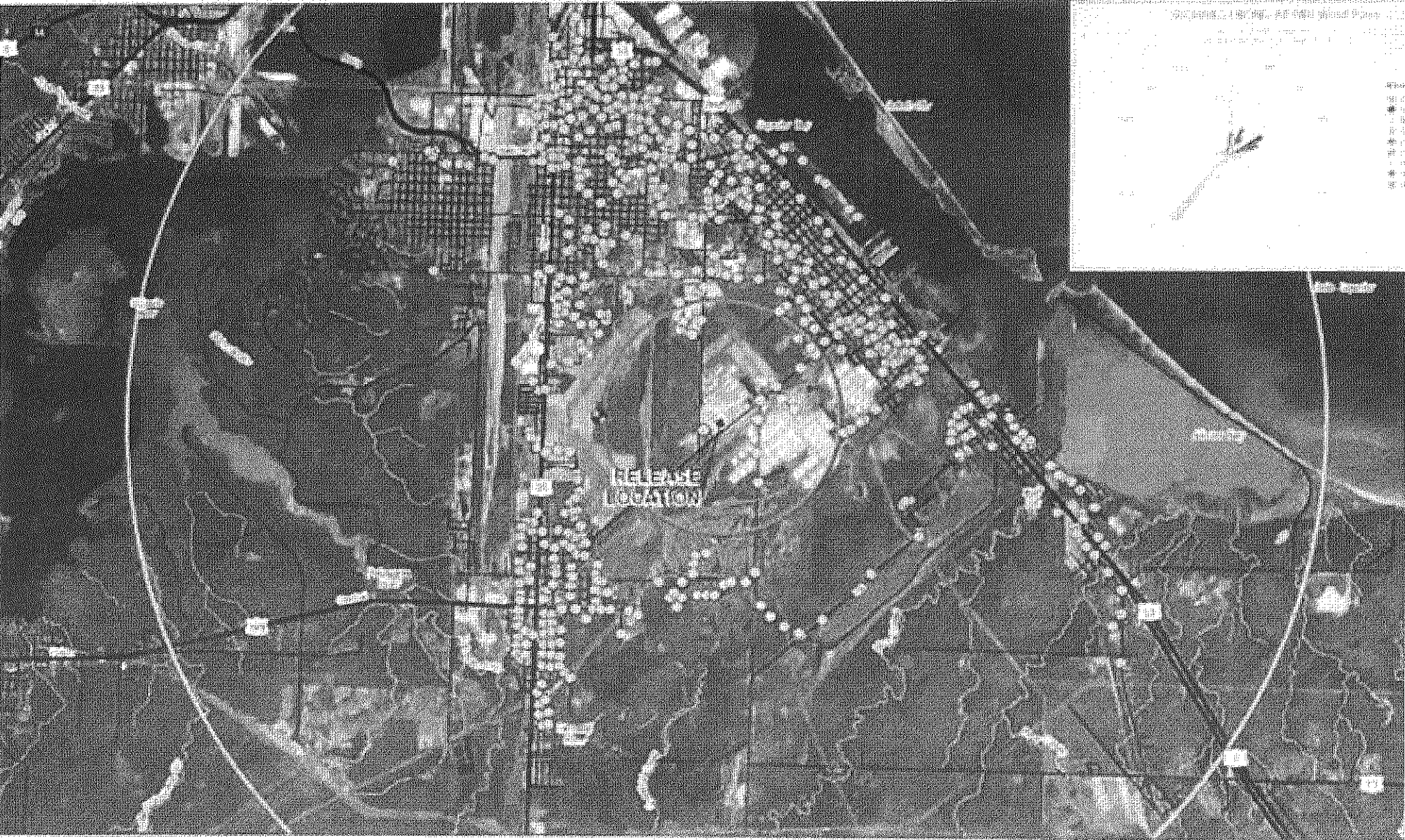
6.2 Reporting Schedule

Additional and Final Polreps TBD

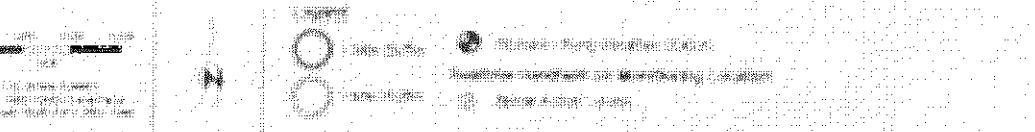
7. Situational Reference Materials

An SDS was supplied by the PRP.

A Final Air Monitoring plan is being implemented.



Map of the study area showing the release location and the monitoring points. The map is based on aerial photography and is not to scale.



COMMUNITY MONITORING
MANUALLY LOGGED REAL TIME RESULTS
21:30 APRIL 29 TO 23:00 APRIL 30, 2010

